

A new record for the fern flora of south-western Australia: a single plant of *Histiopteris incisa* from Mt Lindesay

A single large (rhizome length 0.4 m, leaf length 0.5 m) individual of the cosmopolitan fern *Histiopteris incisa* (Thunb.) J. Sm. (Dennstaedtiaceae) was located on the lower south-western slopes (altitude 110 m) of Mt Lindesay on 3 January 1999. The plant was found growing in a partially shaded, horizontal crevice of a large granite boulder 1.5 m from the ground and 100 metres up a steep slope to the east of the Denmark River. The general area included substantial areas of outcropping in otherwise woodland/forest habitat. This is the first record of this species from south-western Australia, and increases the pteridophyte flora (ferns and fern allies) of the Jarrah Forest Bioregion to 30.

In Australia, *H. incisa* is common along the south-eastern and eastern coasts from south-eastern South Australia and Tasmania to south-eastern Queensland, with scattered populations north to the Atherton Tableland and in the MacDonalld Ranges and Kakadu area of the Northern Territory (Brownsey 1998). There is also a single record from the Durrack Range in the Kimberley of Western Australia (Wheeler *et al.* 1992). It is also found widely throughout the tropics and southern temperate regions where it occurs in generally moist open sites (Brownsey 1998).

The as yet undescribed locally endemic *Eucalyptus 'virginia'* ms. (Hopper & Wardell-Johnson unpublished) is the most common overstorey species in the immediate site. Other plant species associated with this site include *Corymbia calophylla*, *Eucalyptus marginata*, *Xanthosia rotundifolia*, *Hypocalymna angustifolium*, *Loxocarya flexuosa*, *Agonis hypericifolia*, *Xanthorrhoea preissii*, *Leucopogon capitellatus*, *Hovea elliptica*, *Agonis marginata*, *Lepidosperma effusum*, *Hakea undulata*, and *Dodonaea ceratocarpa*.

Despite the seemingly appropriate habitat for a wide range of ferns and fern allies in the south-west, few species occur there. Thus only 22 species including three introductions, are known from the Warren Bioregion, the most important centre for conservative, relictual high rainfall vascular plant taxa in the State (Hopper *et al.* 1992, Lyons *et al.* in press). No species are confined to the high rainfall south-western forests. Rather, all from the Warren Bioregion are widespread generalists, many of which are outliers in the south-western forests where they are known from few records (e.g. *Hypolepis rugosula* (Labill.) J. Sm., *Asplenium obtusatum* G. Forst., *Christella dentata* (Forssk.) Brownsey & Jermy).

Mt Lindesay lies on the margins of the Warren and the generally drier more seasonal Jarrah Forest Bioregion. This area is notable as a centre for endemism in the region (Wardell-Johnson & Williams 1996, Wardell-Johnson & Horwitz 1996). Only one of the pteridophyte species found in the Jarrah Forest Bioregion is endemic to Western Australia (*Isoetes tripus* A. Braun). Several other species are notable endemics to Western Australia, though all are species from the transitional rather than the high rainfall zone, providing further support to south-western Australia having been through climatic bottlenecks in the past (e.g. Brimhall *et al.* 1988). Westerly weather patterns also prevent south-western Australia having a nearby source for the re-establishment of species (Chinnock pers. comm.).

The *Histiopteris* individual is 15 km from the nearest population centre (Denmark), and over a kilometre from cleared land, and from the picnic area at the base of Mt Lindesay. There is no evidence that the specimen was planted, as it is well established within a narrow ledge and the rhizome is difficult to access. However, the possibility of relatively recent natural establishment (< 20 years) from a cultivated source within the south-west cannot be ruled out, given the prolific spore production of this

species and its general cultivation in greenhouses. It is possible that substantial areas of suitable habitat for this species would exist within the south-western forests. It is also likely that several other fern species might appear and subsequently be lost from time-to-time within the region.

One specimen has been lodged with the Western Australian Herbarium (PERTH 05243912) and one with the Queensland Herbarium (BRI AQ671573).

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